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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,070	04/05/2001	Jenny A. Tyler	21087000100	7266
22434	7590	02/12/2004	EXAMINER	
BEYER WEAVER & THOMAS LLP			LIN, JEYUHU	
P.O. BOX 778			ART UNIT	
BERKELEY, CA 94704-0778			PAPER NUMBER	
			3737	13

DATE MAILED: 02/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/828,070

Applicant(s)

TYLER, JENNY A.

Examiner

Jeoyuh Lin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Entry of Amendment

1. Applicant's amendment, filed on July 14, 2003, as paper No. 12, is acknowledged. Claims 1-17 are currently pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

-Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paul et al., (US 5,320,102) and in view of Lang. (US 5,671,741)

Paul teaches a method of MR imaging of the cartilage to diagnose proteoglycan deficiency comprising the following steps:

- Establishing magnetic field in body
- Exciting nuclei spins in body with RF signal oriented at an angle with respect to magnetic field.
- Receiving MR signals.
- Wherein the two previous steps are spin echo pulse sequences with varying echo times. (Column 3, lines 60-65)
- Repeating steps b and c and obtaining multiplicity set of MR signal and determine MR quality from the body in the form of T1 or T2-weighted signal intensity. (Column 4, lines 50-55, column 9, lines 55-60, and column 1, lines 1-8)

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- Quantizing MR quality signals pixel-by pixel. (Column 5, lines 18-25 and column 11, lines 61-67)
- Displaying the image. (Column 5, lines 16-27 and column 6, lines 8-24)
- Correlating obtained quality data with known, either through previously acquired MR quality data (Column 12, lines 43-55), or with a reference signal intensity (Column 11, lines 56-62, and column 12, lines 25-30, or the combination of claims 1, 3, 7, and 10 in the instant reference)
- Determine the biological property of the body, namely the proteoglycan concentration, a biochemical property of the cartilage. (Column 11, line 62)

Paul fails to specifically teach selecting one parameter, such as those defined in claim 2, and directing correlating the parameter with the biological property of the tissue. Lang teaches the analysis of quantitative data from parameters, including those of signal intensity data, T1 and T2 relaxation times in order to statistically correlate the data with the biological property of a necrotic tumor tissue. (Column 12, lines 8-64.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt Lang's teachings into Paul's device such that differentiation of normal and diseased tissue may be more accurately diagnosed through statistical analysis.

-Claims 1, 2, 5-7, and 10-15 are rejected under 35 U.S.C. 103(A) as being unpatentable over Ackerman et al., (US 6,185,444 B1) and in view of Lang.

Ackerman teaches a method and apparatus of solid-state magnetic resonance imaging to determine the bone mineral density, comprising the following steps:

- Applying time-varying echo pulse. (Column 5, lines 58-67, column 6, lines 64-68,

and column 7, lines 1-25)

-Obtaining the T2 relaxation time. (Column 5, lines 58-67)

-T1 and T2 characterization, (Column 7, lines 35-40) to determine isotopic phosphorous content, or a measure of bone mineral density. (Column 10, lines 1-45)

-Pixel by pixel analysis. (Column 10, lines 55-58)

-Image display.

-Correlating the MR data with known data. (Column 15, lines 40-45)

Ackerman fails to specifically teach selecting one parameter, such as those defined in claim 2, and directing correlating the parameter with the biological property of the tissue. Lang teaches the analysis of quantitative data from parameters, including those of signal intensity data, T1 and T2 relaxation times in order to statistically correlate the data with the biological property of a necrotic tumor tissue. (Column 12, lines 8-64.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt Lang's teachings into Ackerman's device such that differentiation of normal and diseased tissue may be more accurately diagnosed through statistical analysis.

Response to Arguments

3. Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion


4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeoyuh Lin whose telephone number is (703) 306-5990. The examiner can normally be reached on m-f, 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dennis Ruhl can be reached on (703) 308-2262. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-0758.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0858.

JYL

JYL
January 28, 2004


DENNIS W. RUHL
SUPERVISORY PATENT EXAMINER